

Remarks

Applicant respectfully requests reconsideration of this application as amended. No claims have been amended or cancelled. Claims 28-75 have been added. Therefore, claims 9-13 and 15-75 are presented for examination.

35 U.S.C. §103(a) Rejection

Claims 9-12 and 15-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Smith et al. (U.S. Patent No. 5,912,927) in view of Ohgami (U.S. Patent No. 5,430,789). Applicant submits that the present claims are patentable over Smith in view of Ohgami.

Smith discloses a multi-channel transmitter to overcome the disadvantages of applying adaptive antenna array technology to multi-channel communication systems. Digital signal combining and splitting is utilized to avoid losses and signal degradation. Multi-channel radio frequency (RF) signals received via an adaptive antenna array are converted from an analog form to a digital form prior to splitting and processing to recover communication channel contained therein. In addition, a number of digital communication signals are digitally combined into a multi-channel digital signal and converted from the digital form to an analog RF form prior to transmission from the adaptive antenna array. (Smith at col. 2, ll. 3-17.)

Ohgami discloses a cellular mobile base station apparatus comprising a first through fourth plurality of transceivers operating in a first through fourth radio frequency range assigned to a first through fourth cell and are receiving power from a first through fourth power supply unit. The outputs of the first and third pluralities of transceivers are combined and transmitted from a first antenna and a signal in the first frequency range received by the

first antenna is decomposed into first frequency range individual signals and applied to the first and third plurality of transceivers. The outputs of the second and fourth pluralities of transceivers are combined and transmitted from a second antenna and a signal in the second frequency range received by the second antenna is decomposed into second frequency range individual signals and applied to the second and fourth plurality of transceivers. (Ohgami at Abstract.)

Claim 9 recites:

A communications device comprising:

a transmitter coupled to an antenna array, the antenna array comprising a plurality of antenna elements, the transmitter operable to transmit a calibration burst by:

transmitting a first waveform from a first antenna element of the plurality of antenna elements, the first waveform comprising a combined signal that is a combination of two or more signals; and
transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal.

Applicant submits that Smith does not disclose or suggest transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, as recited by claim 9. The Final Office Action asserts that Smith discloses the feature of “the signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal (fig. 4, col. 3, line 42 to col. 4, line 65).” (Final Office Action mailed 5/4/06 at pg. 2.) However, nowhere in the cited portion of Smith is there disclosed a second waveform comprising two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, *where the two or more signals were*

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previously combined in a first waveform sent from a first antenna element. Therefore, Smith does not disclose or suggest the cited feature of claim 1.

In addition, the Final Office Action acknowledges that “Smith et al. do[es] not disclose...transmitting a second waveform from second antenna elements of the plurality of antenna elements.” (Id. at pg. 3.) However, it does cite Ohgami as disclosing this feature. (Id. at pg. 3.) Applicant further submits that Ohgami does not disclose or suggest transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal. The Office Action cites column 2, lines 26-38 of Ohgami as disclosing this feature. (Id.) This cited portion of Ohgami discloses outputs of a first and third set of transceivers being combined and transmitted from a first antenna. (Ohgami at col. 2, ll. 26-28.) It further discloses outputs of a second and fourth set of transceivers being combined and transmitted from a second antenna. (Id. at ll. 32-43.)

First, nowhere in this cited portion of Ohgami is there disclosed *transmitting a second waveform from two or more antenna elements*. In Ohgami, the output from the first and third transceivers, as well as the output from the second and fourth transceivers, are each sent on only one antenna. There is no disclosure or suggestion anywhere in Ohgami of a second waveform being sent on two or more antenna elements.

Second, nowhere in the cited portion of Ohgami is there disclosed the second waveform comprising two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, where the two or more signals were previously combined in a first waveform sent from a first antenna element. Although

the Final Office Action states that Ohgami discloses this feature, applicant can find no disclosure or suggestion of such a relationship between the first and second waveforms where the same signals are being sent (e.g., in a combined form for the first waveform, and separately for the second waveform). Therefore, Ohgami does not disclose or suggest the cited feature of claim 1.

As neither Smith nor Ohgami disclose or suggest transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, any combination of Smith and Ohgami also does not disclose or suggest such a feature. Therefore, claim 9 is patentable over Smith in view of Ohgami. Claims 10-13 and 15-16 depend from claim 9 and include additional limitations. As a result, claims 10-13 and 15-16 are also patentable over Smith in view of Ohgami.

Independent claims 17 and 22 also recite, in part, receiving a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal. As discussed above, Smith in view of Ohgami do not disclose or suggest such a feature. Therefore, claims 17 and 22, as well as their respective dependent claims, are patentable over Smith in view of Ohgami.

Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Smith et al. in view of Ohgami and further in view of Miya et al. (U.S. Pub. No. 2003/0186725).

Claim 13 depends from independent claim 9. As discussed above, claim 9 is patentable over

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Smith in view of Ohgami. Miya does not remedy the defects of Smith in view of Ohgami in light of claim 9. Therefore, claim 13 is also patentable over Smith and Ohgami in view of Miya.

Applicant respectfully submits that the rejections have been overcome and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

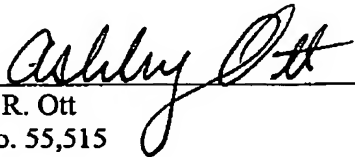
Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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